

## **COMMERCIALIZATION OF ON-LINE GPS SEISMIC HAZARD MONITORING - MODEL FOR CORPORATE AND EDUCATIONAL OUTREACH**

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The Jet Propulsion Laboratory (JPL), through its development of satellite-based technologies for geophysical applications, such as high-resolution Global Positioning System (GPS) geodesy and remote sensing, can contribute unique resources and capabilities to the design and implementation of interdisciplinary earth science curricula at the K-12 level. These technologies have helped expand our understanding of tectonic and earthquake processes in Southern California. The recent increase in local seismicity is driving a plan for deploying over 200 permanent GPS installations in the Los Angeles Metropolitan Area to monitor continuously changes in crustal strain and complement the response of existing seismographic instrumentation in all phases of the earthquake cycle.

The realization of such a network, however, depends on several factors. Foremost is outlining the benefits to be derived by public, private and educational sectors. This will encourage corporate investment for capitalization and operations costs, projected to be several million dollars over a period of a decade, and increase public awareness. Private sponsorship also is critical for making computer and educational resources at the K-12 level accessible. Educational outreach is a marketing facet of technology commercialization. The Internet and World-Wide Web, for example, can be used to make processed GPS data available in near-real-time to private system subscribers and public educators. A K-12 teacher training program similar to ongoing efforts in planetary science and space exploration at JPL can stress the role of science and satellite-based technology in natural hazards assessment and environmental management, all with interactive multimedia.

An interactive approach transcends demographic boundaries. An important element is the involvement of minority serving universities in an interdisciplinary program cutting across schools and colleges of education, engineering and science. Minority-serving institutions will be at the forefront of using seismic, geodetic and remote sensing methods for K-12 teacher training in the earth sciences, as well as for developing undergraduate capstone engineering and science clinics.

This private and public collaboration will advance minority presence in science, engineering and technology education, beginning at the critical pre-college levels. In the long run, this will help increase the global competitiveness of U.S. industry. A strategic model for an on-line GPS seismic hazard monitoring network is presented, with elaboration of K-12 educational merits and preliminary market estimates for commercialization.

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2. Same as above.
3. For special session: Seismology in K-12 Education
4. Oral presentation preferred.